

## Cylindrical Broach production








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Broaches are high performance tools which are used in manufacturing process of inner and outer patterns like generation of inner gear profiles. SCHNEEBERGER offers production and resharping possibilities for broaches. Major geometry attributes of the broach like pitch, diameter, depth of flute etc. can be measured inside the machine using 3D probe. Grinding can be performed based on the entered or on the probed values.

Current example is a round broach with Ø30mm, 760mm profile length, 24 spline grooves and 67 teeth in total.



### 1. Cycletime for Production

Tool specifications				
round				
Material HSS				
Operations				
Feed [mm/Min]	2000	100	5000	250
Power [kW]		2	4	2
Cutting feed [m/s]		28	30	28
Used wheels				
Grinding time [min]	5	65	240	65
Total cycle time	6h 15min			

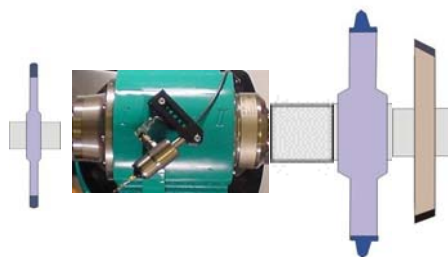
The mentioned cycle times are indicative. The material to be ground, different grinding wheels or other coolants can influence the cycle times considerably.

This calculation is based on usage of ceramic wheel for profiling, which must be dressed after every 6 gaps. Infeed amount is about 1mm in total, 0.03mm per pass.

Usage of vetrified CBN wheel for profiling reduces the grinding time to 1/2 of indicated time.

### 2. Used Grinding Wheels

35 Ø50 14F1 B126  
34 Ø150 DXF C120  
14 Ø125 1V1 B126



### 3. Machine and Software Requirements

Machines: 6 axes CNC grinder : CORVUS BBA  
Control: Fanuc 31i  
Coolant: Synthetic Oil, pressure 6 - 7 bar  
Software: Quinto 5

responsible engineer: SIW, 10.09.12

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J. SCHNEEBERGER Maschinen AG 4914 Roggwil Switzerland  
Subsidiaries in: France, Deutschland, Italia, United States, China